Package 'DemographicTable'

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Type Package

Title Creating Demographic Table

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Description Functions for creating demographic table with simple summary statistics, with optional comparison(s) over one or more groups. Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges, and compared using two-sample t-test, Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and factor variables are summarized in counts and percentages and compared using chi-squared test and/or Fisher's exact test.

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Create Demographic Table

Description

Functions for creating demographic table with simple summary statistics, with optional comparison(s) over one or more groups. Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges, and compared using two-sample t-test, Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and factor variables are summarized in counts and percentages and compared using chi-squared test and/or Fisher's exact test.

`as_flextable.DemographicTable`

Convert DemographicTable to flextable

Description

Convert a DemographicTable to flextable object.

Usage

```
## S3 method for class 'DemographicTable'
as_flextable(x, font.size = 9, caption, ...)
```

Arguments

`x`	a DemographicTable
`font.size`	integer scalar, the font size (default 8)
`caption`	(optional) character scalar, the table caption. If missing (default), no caption is included
`...`	potential additional parameters, not currently in use

Value

as_flextable.DemographicTable returns a flextable object.

See Also

as_flextable fontsize set_caption

class1List *class1List*

Description

The first class of each columns in a recursive object

Usage

```
class1List(x)
```

Arguments

x	a data.frame or list

Value

class1List returns a list of the first class of each element of the input.

Examples

```
class1List(esoph)
class1List(lm(Ozone ~ Wind + Temp, data = airquality))
```

DemographicTable *Create Demographic Table*

Description

Create a demographic table with simple summary statistics, with optional comparison(s) over one or more groups.

Usage

```
DemographicTable(
  data,
  data.name = substitute(data),
  groups = NULL,
  keep_missing_group = TRUE,
  exclude = NULL,
  exclude_pattern,
  include,
  include_pattern,
  overall = TRUE,
  compare = TRUE,
  ...
)
```

Arguments

`data`	a data.frame
`data.name`	character scalar, or the argument call of `data`. A user-friendly name of the input `data`.
`groups`	character scalar or vector, the name(s) of sub-group(s) for which the summary statistics are to be provided. Default `NULL` indicating no sub-groups.
`keep_missing_group`	logical scalar. If `TRUE` (default), the subjects with missing `group` are put into a new group (`'.missing'`). if `FALSE`, these subjects are removed from group-wise summary statistics.
`exclude`	character vector, the name(s) of variable(s) to be excluded. Default `NULL` indicating no variable are to be excluded.
`exclude_pattern`	(optional) character scalar as regular expression, the **pattern** of the names of the variable(s) to be excluded.
`include`	character vector, the name(s) of variable(s) to be included. Default `names(data)` indicating all variables are to be included.
`include_pattern`	character scalar as regular expression, the **pattern** of the names of the variable(s) to be included.
`overall`	logical scalar. If `TRUE` (default), a column of overall summary statistics will be provided.
`compare`	logical scalar. If `TRUE` (default), comparisons between group(s) will be made.
`...`	potential parameters

Details

A demographic table with simple summary statistics, with optional comparison(s) over one or more groups, is created.

Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges. If `group` is specified, they are compared using two-sample t-test, Wilcoxon / Mann-Whitney test, one-way ANOVA and/or Kruskal-Wallis test.

logical and factor variables are summarized in counts and percentages. If `group` is specified, they are compared using chi-squared test and/or Fisher exact test.

Value

DemographicTable returns an object of S3 class `'DemographicTable'`, which inherits from matrix.

Examples

```
DemographicTable(esoph)
DemographicTable(ToothGrowth, groups = 'supp')
DemographicTable(ToothGrowth, groups = 'supp', compare = FALSE)
```

```
DemographicTable(warpbreaks, groups = c('wool', 'tension'))
DemographicTable(mtcars, groups = c('vs', 'am'), include = c('mpg', 'cyl', 'disp'))

# with missing value
DemographicTable(airquality, groups = 'Month', exclude = 'Day')
DemographicTable(MASS::survey, groups = 'Smoke')
DemographicTable(MASS::survey, groups = 'Smoke', keep_missing_group = FALSE)
DemographicTable(MASS::survey, groups = 'Smoke', keep_missing_group = FALSE, useNA = 'always')

# write to Word file
library(flextable)
library(officer)
x = read_docx() |> body_add_flextable(value = as_flextable(DemographicTable(esoph)))
(out = file.path(tempdir(), 'demotable.docx'))
print(x, target = out)
# system(paste('open', out)) # works on Mac & Windows, but requires Microsoft Word
file.remove(out)
```

`pval_shapiro` *P-value from modified Shapiro-Wilk Normality Test*

Description

Obtain p-value from Shapiro-Wilk normality test, taking into consideration of several exceptions.

Usage

```
pval_shapiro(x, CLT = FALSE)
```

Arguments

`x`	double vector
`CLT`	logical scalar, whether to allow the use of Central Limit Theorem (default `FALSE`)

Details

pval_shapiro provides a pseudo p-value for the several exceptions of shapiro.test function, serving as a criteria of whether robust statistics/tests need to be used

- `length(x) < 3L` return `0`, robust methods needed
- `length(x) > 5e3L` return `1`, no robust method needed (robust methods could be too slow)
- `CLT & length(x) > 30L` return `1`, no robust method needed because of the use of Central Limit Theorem
- all `x` values identical return `0`, robust methods needed.
- Otherwise use the p-value from shapiro.test

Value

pval_shapiro returns a double scalar.

Examples

```
pval_shapiro(rnorm(5))
sapply(with(airquality, split(Ozone, f = Month)), FUN = pval_shapiro)
```

`summaryText` *Summary Text*

Description

Provide the summary text of an R object

Usage

```
summaryText(x, fmt, ...)
```

Arguments

`x`	an R object
`fmt`	see sprintf
`...`	potential parameters

Value

summaryText returns a character scalar

Examples

```
x = rpois(n = 20L, lambda = 2)
x[sample.int(length(x), 3L)] = NA_integer_
summaryText(x)

# factor
x = state.region
x[2L] = NA_integer_
summaryText(x)

# binary
summaryText(c(TRUE, FALSE, TRUE, NA))
summaryText(c(TRUE, FALSE, TRUE))
summaryText(c(FALSE, FALSE, NA))
summaryText(c(FALSE, FALSE, FALSE))
summaryText(c(NA, NA, NA))
```

`xtable.DemographicTable` *Write DemographicTable to LaTeX*

Description

Write DemographicTable to LaTeX.

Usage

```
## S3 method for class 'DemographicTable'
xtable(x, ...)
```

Arguments

`x`	a DemographicTable
`...`	potential parameters of xtable

Value

xtable.DemographicTable returns an xtable object.

See Also

xtable

Examples

```
(tb = DemographicTable(ToothGrowth, groups = 'supp'))
library(xtable)
print(xtable(tb), sanitize.text.function = identity,
 sanitize.colnames.function = NULL, include.rownames = FALSE)
```

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